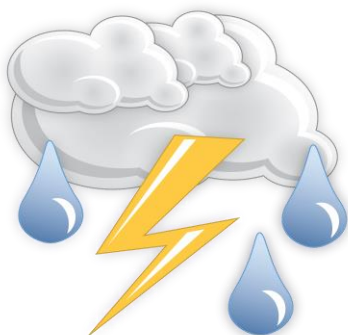


MIAMI-SOUTH FLORIDA

National Weather Service

Forecast Office

<http://www.weather.gov/miami>



2022 Severe Weather Awareness Week

**Monday, February 7th:
Lightning Awareness Day**



Lightning is often a common occurrence in the daily afternoon thunderstorms that rumble across South Florida during our rainy season. Therefore, it is always important to remain weather aware and to practice proper safety precautions in the event of lightning in the area.

In 2021, 10 people died from lightning strikes in the U.S., 4 of them in Florida. These numbers are well below the yearly averages over the past several decades (**Figure 1**), largely in part to greater education and awareness of the danger that lightning poses, as well as adequate safety measures that allow for ample warning time, such as lightning detection systems, which are now commonplace at many parks, beaches, and public facilities across South Florida.

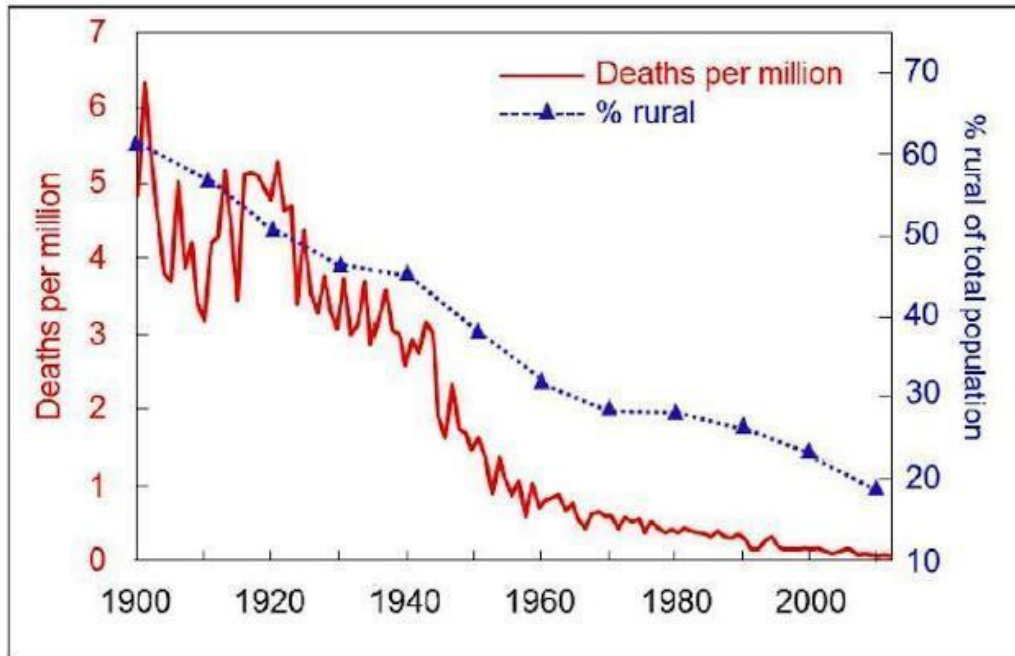


Figure 1: U.S. lightning fatalities in deaths per million since 1900. From Weather Underground. Credit: Ron Holle, updated from [López and Holle 1998](#).

U.S. Lightning Fatalities, 2010-2021

weather.gov/lightning

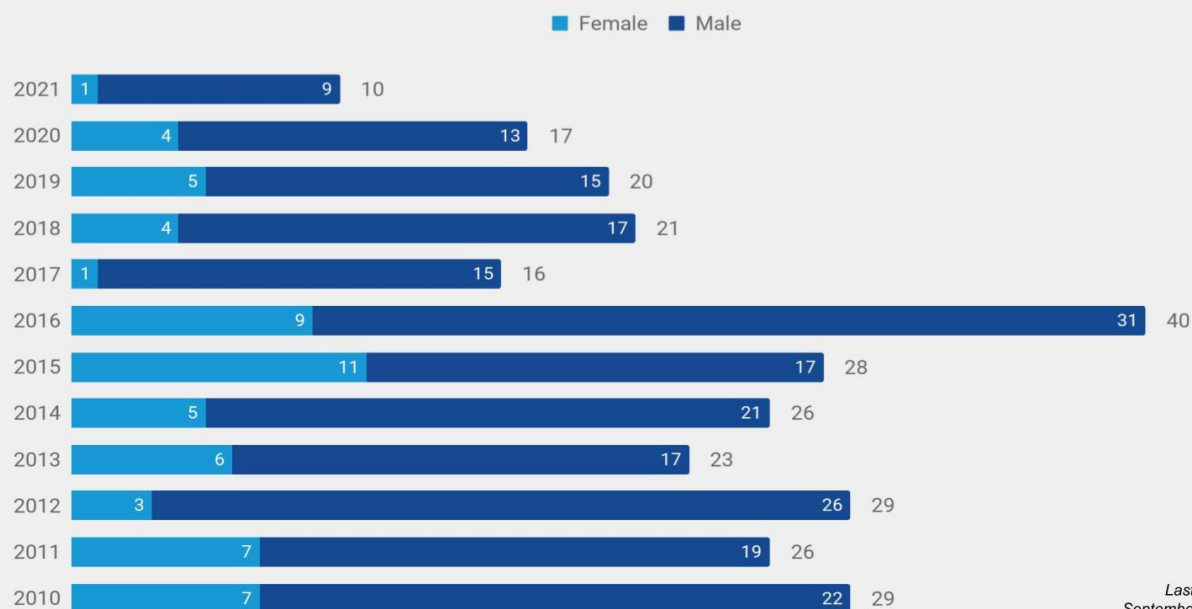
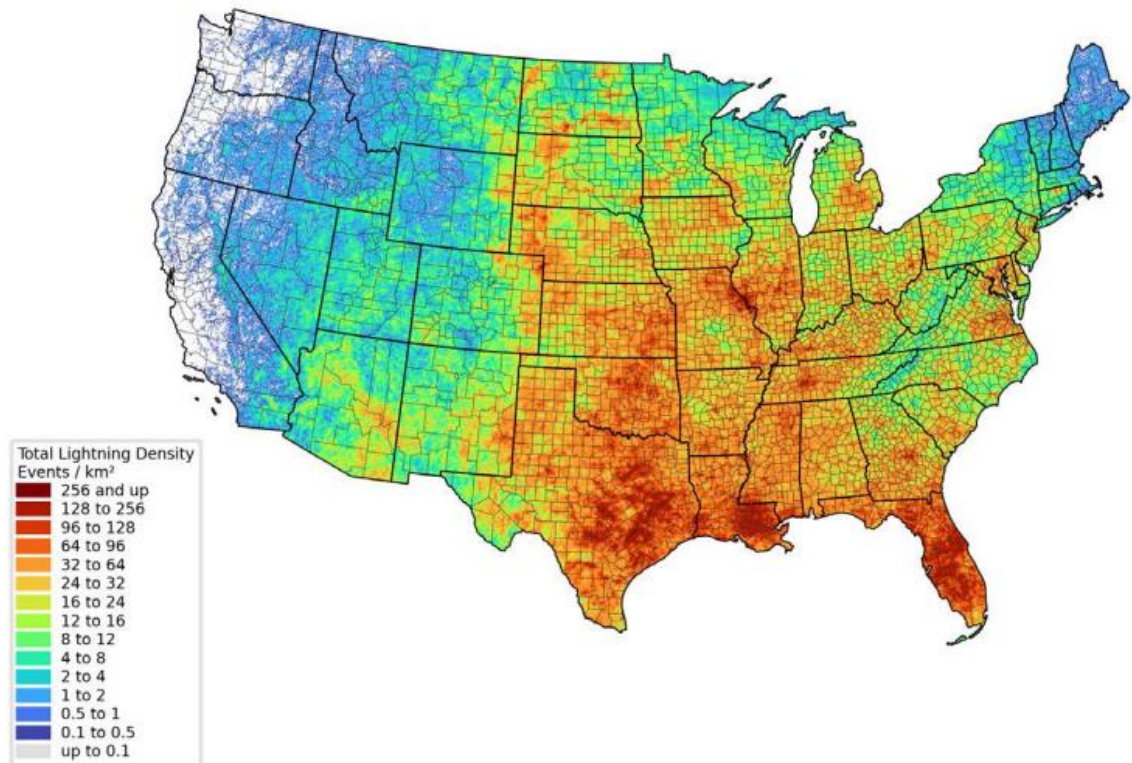


Figure 2: Annual Lightning Fatalities from 2010-2021.

Despite the downward trend in deaths, lightning is still occurring at high rates in Florida. In fact, according to Vaisala, in 2021 Florida led the country in total lightning events per square mile with 223! **It is very important to be aware that lightning is a present, year-round danger in South Florida, particularly from afternoon thunderstorms during the summer months.** Lightning flash density data from 2021 continues the long-standing fact that Florida is the “lightning capital” of the United States (Figure 3). In an area so vulnerable to lightning such as South Florida, lightning safety needs to be a permanent part of our education and awareness efforts.

Total lightning density gridded map 2021

Cloud-to-ground strokes plus cloud pulses



VAISALA

2021 ANNUAL LIGHTNING REPORT

© Vaisala 2022

Figure 3: Total Lightning Density 2021, courtesy of [Vaisala Annual Lightning Report 2021](#).



Lightning safety is as important and simple as this rule: **when thunder roars, go indoors!** If you hear thunder then you are close enough to get struck by lightning. No place outside is safe from lightning! A metal-enclosed vehicle is a good alternative, however only if there are no enclosed buildings accessible nearby. The greatest number of people in Florida are struck by lightning while near or on a body of water. Many others are struck while standing and seeking protection from the elements under trees. Other vulnerable locations are open areas with few trees such as construction sites, farms, ball fields, playgrounds, and golf courses. School-related activities also rate high in lightning vulnerability, including walking to and from school and after-school events.

The large number of high-rise buildings and the current construction boom in South Florida also puts construction workers and even residents in upper floors at a greater risk since tall objects are struck by lightning much more frequently than objects close to the ground.

According to the NWS Storm Data, over the thirty (30) year period from 1991-2010, the United States averaged 39 *reported* lightning-caused deaths per year. Only about ten percent (10%) of people struck by lightning are killed, leaving ninety percent (90%) with various degrees of injury and in severe cases, disability. More recently, in the last ten (10) years (2012-2021), the United States has averaged 23 lightning fatalities which corresponds to the aforementioned fact that lightning fatalities and injuries have decreased significantly over the last several decades (Figure 1).

Odds of Becoming a Lightning Victim (based on averages for 2009-2018)				
Estimated U.S. population as of 2019				330,000,000
Average Number of Deaths Reported	27	Estimated number of Injuries	243	270
Odds of being struck in a given year (estimated total deaths + estimated injuries)				1/1,222,000
Odds of being struck in your lifetime (Est. 80 years)				1/15,300
Odds you will be affected by someone struck (10 people for every 1 struck)				1/1,530

Figure 5: Odds of Becoming a Lightning Victim.

DON'T JUST LOOK STRAIGHT UP

There are several myths about lightning that are important to dispel. One is that lightning only strikes when dark clouds are directly overhead and/or rain is falling. Several cases in the past few years have proven this to be false. Lightning can strike several miles away from the heavy rain area of the thunderstorm, and in some cases can strike up to 10 miles away or more! On July 17th, 2021, a 17-year-old boy was fishing at the beach in Marco Island when a single lightning bolt from an approaching thunderstorm struck the beach and hit him, causing fatal injuries. This is an unfortunate but all-too-common occurrence of lightning preceding the arrival of a thunderstorm when rain is not yet falling.

This type of lightning is misleadingly referred to as “dry lightning” or “bolts from the blue”, but they actually originate from the side of a thunderstorm cloud and can be even deadlier than those in the middle of a heavy downpour. Therefore, the greatest danger often comes with the first or last flash because that’s when people least expect lightning to strike. Remember that simple saying: **When Thunder Roars, Go Indoors**? Keep it in the back of your mind! This is why it is so important to head indoors as soon as the first clap of thunder is heard. Darkening clouds are usually the first sign that lightning may strike nearby. Wait in a safe indoor location until 30 minutes after the last boom of thunder is heard or the all-clear signal is given at parks, beaches, and other public locations.

SEVERE WEATHER AWARENESS WEEK 2022

LIGHTNING

If you can hear thunder, you are close enough to be struck by lightning.

Lightning occurs with every thunderstorm - Have a way to receive important weather alerts.



Locate a safe room away from windows in the interior of your home or business.

Check the weather forecast before spending extended time outdoors and watch for signs of approaching storms while outside.



FLORIDADISASTER.ORG/HAZARDS/LIGHTNING

BE INFORMED. BE PREPARED

If planning to be outdoors, stay informed of the latest weather conditions by listening to NOAA Weather Radio or by monitoring the latest forecasts via TV, radio, personal computers, and/or mobile devices. Have a safe indoor location planned and be prepared to take shelter inside an enclosed building if a thunderstorm approaches or forms nearby.

Although the National Weather Service does not issue specific lightning warnings, routine products such as the [Hazardous Weather Outlook](#) and the [Surf Forecast](#) describe the daily lightning danger in South Florida on a scale ranging from none, to slight, to moderate, to high. When a storm producing excessive lightning is observed or is imminent, a Special Weather Statement/Significant Weather Advisory is issued to alert of its location. Checking these products before venturing outside can make the difference between life and death.

SEVERE WEATHER AWARENESS WEEK 2022

LIGHTNING



Stop swimming and other outdoor activities during a storm



Stay away from **windows** and **electric devices**



Seek shelter inside an **enclosed building**

FLORIDADISASTER.ORG/HAZARDS/LIGHTNING



Remember, any thunderstorm can produce a lightning flash which can kill you and those nearby.

For further lightning information, as well as daily hazardous weather outlooks which indicate the threat of lightning over South Florida, as well as special weather statements, please visit the National Weather Service in Miami's website at www.weather.gov/southflorida.

For general lightning safety tips as well as educational material, please visit the National Weather Service lightning safety page at <https://www.weather.gov/safety/lightning>.